

REMARKS

Following the amendment of the Claims as outlined above, Claims 21-41 are pending in this Application. New Claim 21 is an independent claim. New Claims 22-41 all depend directly or indirectly from new independent Claim 21. Each of new Claims 21-41 is directed at a method for limiting current flow between an electrified high voltage powerline and an adjacent conductor of electricity in the event of creation of a short circuit between the electrified high voltage powerline and the conductor of electricity.

Cancelled Claims 1-15 were all rejected in the Office Action dated December 18, 2002 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,997,894 (Blum et al) and U.S. Patent No. 5,599,374 (Detrick).

New independent Claim 21 is directed specifically at a method for use in connection with a high voltage power transmission installation comprising an electrified high voltage powerline and an adjacent conductor of electricity. The purpose of the method of new independent Claim 21 is to limit current flow between the electrified high voltage powerline and the conductor of electricity in the event of creation of a short circuit between the electrified high voltage powerline and the conductor of electricity.

The method of new independent Claim 21 comprises the following steps:

- (a) selecting a portion of the high voltage power transmission installation having a configuration which renders the portion of the high voltage power transmission installation susceptible to creation of the short circuit at a location of the portion of the high voltage power transmission installation;
- (b) determining a desired electric insulating capability such that creation of the short circuit will result in an amount of current flow between the electrified high voltage powerline and the conductor of electricity which is below a predetermined limit in the amount of current flow;

- (c) selecting a dielectric material having a suitable insulating strength for providing the desired electric insulating capability; and
- (d) while the electrified high voltage powerline is electrified, applying a thickness of the selected dielectric material to at least one of the electrified high voltage powerline and the conductor of electricity which is sufficient to provide the desired electric insulating capability.

Support for the limitations contained in new independent Claim 21 is found in the Specification as follows:

1. support for "...high voltage power transmission installation comprising an electrified high voltage powerline..." in the preamble is found at page 8, lines 20-23;
2. support for "...limiting current flow between the electrified high voltage powerline and an adjacent conductor of electricity in the event of creation of a short circuit between the electrified high voltage powerline and the conductor of electricity,..." in the preamble is found at page 8, lines 20-23;
3. support for method step (a) is found in the Specification at page 8, line 24 to page 9, line 7 and at page 12, line 6 to page 13, line 7;
4. support for method step (b) is found in the Specification at page 8, lines 5-10, page 9, lines 12-15, and at page 11, line 19 to page 12, line 5;
5. support for method step (c) is found in the Specification at page 9, line 8 to page 12, line 25; and
6. support for method step (d) is found in the Specification at page 7, lines 22-24, at page 12, line 6 to page 13, line 7 and at page 14, lines 4-9.

Support for the limitations contained in new dependent Claims 22-41 is found in the Specification as follows:

1. support for Claims 22-26 is found in the Specification at page 12, line 6 to page 13, line 7;
2. support for Claims 27-29 is found in the Specification at page 9, line 15 to page 10, line 3 and at page 11, line 3 to page 12, line 5;
3. support for Claims 30-33 is found in the Specification at page 10, lines 4-11;
4. support for Claims 34-37 is found in the Specification at page 13, line 8 to page 14, line 13 and in Figure 3;
5. support for Claims 38-39 is found in the Specification at page 1, lines 16-19 and at page 8, line 24 to page 9, line 2; and
6. support for Claims 40-41 is found in the Specification at page 9, lines 8-15.

The Applicant's invention as described in new independent Claim 21 and new dependent Claims 22-41 is directed at a very specific problem which is associated with high voltage electrical power transmission.

The transmission and distribution of electrical power is typically carried out using high voltage powerlines. A typical powerline can extend overhead for large distances and can therefore require numerous support structures to support the powerline.

Due to their length, high voltage powerlines are typically uninsulated in order to save on both cost and weight, but are typically connected with support structures (e.g. conductors of electricity) using insulated connectors so that electric current can flow in the normal course from the uninsulated conductor through the support structures to ground.

Unfortunately, support structures such as pylons, poles and towers provide attractive roosts for birds and animals, particularly in treeless regions. If a bird, animal or other conductor simultaneously contacts a high voltage powerline and another conductor of electricity such as an adjacent powerline, support structure or tree, an electrical short circuit can be created which may cause injury or death to birds or animals, power outages, or damage to the electric power infrastructure. This short circuit causing contact may be made by wings, legs or other body parts of birds or animals, or may be made by objects such as wires and branches which are carried in the beaks, mouths or talons of birds or animals.

Problems associated with short circuits can occur anywhere within a high voltage power transmission installation between energized components and other conductors of electricity (such as adjacent electrical wires, support structures or trees). Short circuits are however often created in the vicinity of support structures, due to the propensity of birds and animals to be attracted to support structures.

The Applicant's invention as described in new independent Claim 21 and in new dependent Claims 22-41 is directed at a method which comprises applying a selected dielectric material to at least one of an electrified high voltage powerline and an adjacent conductor of electricity in order to limit the consequences associated with the creation of a short circuit between the electrified high voltage powerline and the conductor of electricity.

By applying the dielectric material only to a selected portion of the high voltage power transmission installation which is susceptible to the creation of a short circuit, the cost associated with the method of the Applicant's invention and the weight which is applied to the high voltage power transmission installation can both be minimized. By applying the selected dielectric material while the electrified high voltage powerline is electrified, the method of the Applicant's invention can be performed on existing operational power transmission installations without disrupting the transmission of electrical power.

The method of the Applicant's invention therefore represents an efficient, cost effective method for preventing birds, animals and humans from creating short circuits which may be life threatening to them and problematic for the power transmission installation.

The method of the Applicant's invention may be performed by applying the dielectric material to the electrified high voltage powerline, to the adjacent conductor of electricity, or to both the electrified high voltage powerline and the adjacent conductor of electricity.

Blum et al describes a flexible coating composition and a method for forming the flexible coating composition. The primary purpose of the flexible coating composition is to render animal resistant an object to which the coating composition is applied. In other words, the coating composition in Blum et al is intended to provide mechanical resistance against animal attack and not electrical insulation. The invention in Blum et al is not intended to protect birds, animals or humans.

The coating composition in Blum et al may be applied to virtually any type of object or structure which is vulnerable to animal attack, including cables, wires, pipes, hoses, roofs, walls, paneling, siding, eaves and foundations and outdoor furniture, fences, bird houses, bird feeders, screens and other items (column 4, line 38 to 50).

Although the coating composition in Blum et al is preferably non-conductive, oxidation resistant and corrosion resistant, it appears that these properties are desirable in order to enhance the durability of the coating composition, and are not intended to enable the coating composition to be used as a dielectric material per se. In fact, it appears to be contemplated that the coating composition in Blum et al would be used to provide an additional animal resistant sheath or covering over conventional fiber optic cables, wires etc. (column 4, lines 7-10).

Blum et al does not teach, describe or suggest any application in which the coating composition could be applied to a high voltage power transmission installation in order to limit current flow between an electrified high voltage powerline and an associated support structure in the event of creation of a short circuit between the electrified high voltage powerline and the

support structure. In addition, Blum et al does not teach, describe or suggest the application of the coating composition to a high voltage power transmission installation while the high voltage powerline is electrified. Finally, Blum et al is not concerned with and does not teach, describe or suggest protecting birds, animals or humans from injury or death due to electrocution.

Detrick describes a process for coating a sulfur-coated urea granular fertilizer with a polymer sealant which is formed from two reactive monomers such as a diisocyanate and a polyol mixture. Detrick has been cited by the Examiner as teaching the application of a polymeric coating by converting it to a hot melt and spraying it on the substrate (column 1, lines 45-50).

The Applicant's invention as claimed in new Claims 21-41 does not specify that the dielectric material is applied to the high voltage power transmission installation by spraying. It is therefore respectfully submitted that Detrick is not relevant to the patentability of new Claims 21-41.

Furthermore, it is respectfully submitted that the process in Detrick for coating small granules of sulfur-coated urea fertilizer would not directly be applicable to the process of the Applicant's invention. First, the Applicant's invention involves the application of a relatively thick coating of a dielectric material to relatively large objects and structures instead of to small granules, with the result that the surface properties and characteristics of the substrate in Detrick are quite different from the surface properties and characteristics of the substrate in the Applicant's invention. Second, the process in Detrick is performed in the relatively controlled environment of a rotating drum, while the method of the Applicant's invention is performed in an open environment in the vicinity of an electrified high voltage power transmission installation.

Finally, Detrick does not teach, describe or suggest the application of a dielectric material to a high voltage power transmission installation in order to limit current flow between an electrified high voltage powerline and an associated support structure in the event of creation of a short circuit between the electrified high voltage powerline and the support structure. In addition, Detrick does not teach, describe or suggest the application of a dielectric material to a high voltage power transmission installation while the high voltage powerline is electrified.

Finally, Detrick does not teach, describe or suggest protecting birds, animals or humans from injury or death due to electrocution.

As a result of the foregoing, it is respectfully submitted that neither Blum et al nor Detrick, separately or in combination, teach, describe or suggest a method for limiting current flow between an electrified high voltage powerline and an associated support structure in the event of creation of a short circuit between the electrified high voltage powerline and the support structure. In addition, neither Blum et al nor Detrick, separately or in combination, teach, describe or suggest such a method having the steps set out in new independent Claim 21.

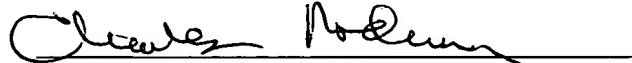
It is therefore respectfully submitted that new independent Claim 21 is allowable and allowance of new independent Claim 21 is therefore respectfully requested.

Dependent Claims 22-41 all depend directly or indirectly from new independent Claim 21. It is respectfully submitted that these dependent Claims are allowable for the distinctions defined therein as well as for the reasons supporting the allowability of new independent Claim 21, and allowance of dependent Claims 22-41 is therefore also respectfully requested.

In view of the foregoing amendments and remarks, it is submitted that this Application is in condition for allowance and allowance is respectfully requested.

Respectfully submitted,

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